

PCN#20200218000.2 Qualify TI Chengdu as an additional Assembly site for select devices Change Notification / Sample Request

Date:February 19, 2020To:PREMIER FARNELL PCN

Dear Customer:

This is an announcement of change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

If samples or additional data are required, requests must be received within 30 days of acknowledgement as samples are not built ahead of the change. You may contact the PCN Manager or your local Field Sales Representative to acknowledge this PCN and request samples or additional data.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Team (<u>PCN ww admin team@list.ti.com</u>). For sample requests or sample related questions, contact your field sales representative.

Sincerely,

PCN Team SC Business Services

20200218000 Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE DRV8702QRHBTQ1 CUSTOMER PART NUMBER null

Technical details of this Product Change follow on the next page(s).

| PCN Numbe | Number: 2020021800 | | 00.2 | | | PCN Date: Feb 19, 2020 | | | Feb 19, 2020 | | |
|--|---|--------|------------|------------------------|--|------------------------|----------|-----------------------|--------------------------------------|-------------------|--|
| Title: Qu | Title: Qualify TI Chengdu as an additional Assembly site for select devices | | | | | | | es | | | |
| Customer Contact: PCN Manager | | | | | Quality Se | ervices | | | | | |
| Proposed 1 st Ship Date: Aug 19 | | | | | Estimated Sample Availability: | | | Pr | rovided upon Request | | |
| Change Type: | | | | | | | | | | | |
| Assembly Site | | | | | Design | | | | | er Bump Site | |
| Assembly Process | | | Data Sheet | | | | <u> </u> | | er Bump Material | | |
| | ly Materials ical Specific | | | Part number change | | | | $\underline{\square}$ | Wafer Bump Process Wafer Fab Site | | |
| | /Shipping/L | | | Test Site Test Process | | | | \exists | | er Fab Materials | |
| | / Shipping/ L | aben | ing | | 10301100 | .033 | | \exists | | er Fab Process | |
| | | | | | PCN De | tails | | | | | |
| Description | of Change | e: | | | | | | | | | |
| Texas Instruments is pleased to announce the qualification of TI Chengdu as additional Assembly Site for Select Devices listed in the "Product Affected" Section. Material differences are as follows. | | | | | | | | | | | |
| _ | | | | U | ГАС | TI C | nengo | du | | | |
| Mount | compound | | | P7 | 0035 | |)7123 | | | | |
| | rame finish | | | | te Sn | | PdAu | | | | |
| Reason for | Change: | | • | | | • | | | | | |
| Continuity o | | | | | | | | | | | |
| Anticipated | impact or | n Fit, | Form, | Fun | ction, Qua | ality or Re | liabili | ity | (posi | tive / negative): | |
| None | | | | | | | | | | | |
| Anticipated | impact or | n Ma | terial D | ecla | ration | | | | | | |
| No Impact to the Material Declaration released | | | | | Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the <u>TI Eco-Info website</u> . There is no impact to the material meeting current regulatory compliance requirements with this PCN change. | | | | | | |
| Changes to product identification resulting from this PCN: | | | | | | | | | | | |
| Assembly Site UTAC Thai Limited Assembly Site Origin (22L) ASO: NSE TI Chengdu Assembly Site Origin (22L) ASO: CDA Sample product shipping label (not actual product label) ECAT: G4 = NiPdAu ECAT: G3 = Matte INSTRUMENTS MADE IN: Malaysia 200: Image: Comparison of the comparison | | | | | | | | | | | |

| Product Affected | | | | | | | | |
|------------------|----------------|-----------------|----------------|--|--|--|--|--|
| DRV8702DQRHBRQ1 | DRV8702QRHBRQ1 | DRV8703DQRHBRQ1 | DRV8703QRHBRQ1 | | | | | |
| DRV8702DQRHBTQ1 | DRV8702QRHBTQ1 | DRV8703DQRHBTQ1 | DRV8703QRHBTQ1 | | | | | |
| | | | | | | | | |

Qualification Report

Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines) Approve Date 12-Feb-2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

| Туре | # | Test Spec | Min Lot Qty | SS/Lot | Test Name / Condition | Duration | Qual Device: <u>DRV8702QRHBRQ1</u> | Qual Device: <u>DRV8703QRHBRQ1</u> |
|------|------|--|-------------------|--------|--|------------------|---------------------------------------|---------------------------------------|
| | Test | Group A – A | cceler | | | | | |
| PC | A1 | - | 3 | 22 | SAM Analysis, Pre Stress | Completed | - | 3/66/0 |
| PC | A1 | JEDEC J- STD-020 JESD22- A113 | 3 | 77 | Preconditioning | Level 2- 260C | - | No fails |
| PC | A1 | - | 3 | 22 | SAM Analysis, Post Stress | Completed | - | 3/66/0 |
| HAST | A2 | JEDEC JESD22- A110 | 3 | 77 | Biased HAST, 130C/85%RH | 96 Hours | - | 3/240/0 |
| HAST | A2 | - | 3 | 1 | Cross Section, Post bHAST 96 Hours | Completed | - | 3/3/0 |
| HAST | A2 | - | 3 | 30 | Wire Bond Shear, Post bHast, 96 Hours | Wires | - | 3/90/0 |
| HAST | A2 | - | 3 | 30 | Bond Pull over Stitch, post bHAST, 96 Hours | Wires | - | 3/90/0 |
| HAST | A2 | - | 3 | 30 | Bond Pull over Ball, Post bHAST, 96 Hours | Wires | | 3/90/0 |
| HAST | A2 | JEDEC JESD22- A110 | 3 | 70 | Biased HAST, 130C/85%RH | 192 Hours | - | 3/210/0 |
| HAST | A2 | - | 3 | 1 | Cross Section, Post bHAST 192 Hours | Completed | - | 3/3/0 |
| HAST | A2 | - | 3 | 22 | SAM Analysis, Post bHAST, 192 Hours | Completed | - | 3/66/0 |
| HAST | A2 | - | 3 | 30 | Wire Bond | Wires | - | 3/90/0 |

| Туре | # | Test Spec | Min Lot Qty | SS/Lot | Test Name / Condition | Duration | Qual Device: DRV8702QRHBRQ1 | Qual Device: <u>DRV8703QRHBRQ1</u> |
|------|----|---|-------------------|--------|---|----------------|--------------------------------|---------------------------------------|
| | | | | | Shear, Post bHast, 192 Hours | | | |
| HAST | A2 | - | 3 | 30 | Bond Pull over Stitch, post bHAST, 192 Hours | Wires | - | 3/90/0 |
| HAST | A2 | - | 3 | 30 | Bond Pull over Ball, Post bHAST, 192 Hours | Wires | - | 3/90/0 |
| тс | A4 | JEDEC JESD22- A104 and Appendix 3 | 3 | 77 | Temperature Cycle, - 65/150C | 500 Cycles | - | 3/298/0 |
| тс | A4 | - | 3 | 1 | Cross Section, Post T/C 500 Cycles | Completed | - | 3/3/0 |
| тс | A4 | - | 3 | 22 | SAM Analysis, Post T/C, 500 Cycles | Completed | - | 3/66/0 |
| тс | A4 | - | 3 | 30 | Wire Bond Shear, Post T/C 500 Cycles | Wires | - | 3/90/0 |
| тс | A4 | - | 3 | 30 | Bond Pull over Stitch Post T/C 500 Cycles | Wires | - | 3/90/0 |
| тс | A4 | - | 3 | 30 | Bond Pull over Ball Post T/C 500 Cycles | Wires | - | 3/90/0 |
| тс | A4 | JEDEC JESD22- A104 and Appendix 3 | 3 | 70 | Temperature Cycle, - 65/150C | 1000 Cycles | - | 3/230/1* |
| тс | A4 | - | 3 | 1 | Cross Section, Post T/C 1000 Cycles | Completed | - | 3/3/0 |
| тс | A4 | - | 3 | 22 | SAM Analysis, Post T/C, 1000 Cycles | Completed | - | 3/66/0 |
| тс | A4 | - | 3 | 30 | Wire Bond Shear, Post T/C 1000 Cycles | Wires | - | 3/90/0 |
| тс | A4 | - | 3 | 30 | Bond Pull over Stitch, Post T/C, 1000 Cycles | Wires | - | 3/90/0 |
| тс | A4 | - | 3 | 30 | Bond Pull over Ball, Post T/C, 1000 Cycles | Wires | - | 3/90/0 |
| PTC | A5 | JEDEC JESD22- A105 | 1 | 45 | Power 1000 Temperature Cycle -40/125C | | - | |
| PTC | A5 | JEDEC | 1 | 45 | Power | 2000 | - | - |

| Туре | # | Test Spec | Min Lot Qty | SS/Lot | Test Name / Condition | Duration | Qual Device: <u>DRV8702QRHBRQ1</u> | Qual Device: DRV8703QRHBRQ1 |
|------|----|--------------------------|-------------------|--------|---|---------------|---------------------------------------|--------------------------------|
| | | JESD22- | | | Temperature | Cycles | | |
| | | A105 | | | Cycle -40/125C | | | |
| HTSL | A6 | JEDEC JESD22- A103 | 3 | 45 | High Temp Storage Bake 150C | 1000 Hours | - | 3/138/0 |
| HTSL | A6 | - | 3 | 1 | Cross Section, Post HTSL 1000 Hours | Completed | - | 3/3/0 |
| HTSL | A6 | JEDEC JESD22- A103 | 3 | 44 | High Temp Storage Bake 150C | 2000 Hours | - | 3/135/0 |
| HTSL | A6 | - | 3 | 1 | Cross Section, Post HTSL 2000 Hours | Completed | - | 3/3/0 |

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40C to +150C

Grade 1 (or Q): -40C to +125C

Grade 2 (or T): -40C to +105C

Grade 3 (or I) : -40C to +85C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level): Room/Hot/Cold : HTOL, ED

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

*: 1 TC fail due to EOS not related to TC, 8D available.

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

| Location | E-Mail |
|--------------|--------------------------------|
| USA | PCNAmericasContact@list.ti.com |
| Europe | PCNEuropeContact@list.ti.com |
| Asia Pacific | PCNAsiaContact@list.ti.com |
| WW PCN Team | PCN ww admin team@list.ti.com |

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the

TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (<u>www.ti.com/legal/termsofsale.html</u>) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.